require 140 patients in each arm to detect a 10% difference at $p<0.05$ at a power of 85%.

► **CLINICAL BOTTOM LINE**

There is no direct evidence to support the effectiveness of buscopan at resolving food bolus impaction in the oesophagus. A large RCT is needed

Basavaraj S, penumetcha KR, Cable HR, *et al*. Buscopan in oesophageal food bolus: is it really effective? *Eur Arch Otorhinolaryngol* 2005;**262**:524–7.
Thomas L, Webb C, Duvv S, *et al*. Is buscopan effective in meat bolus obstruction? *Clin Otolaryngol* 2005;**30**:183–5.

U cast or functional bracing following fractures of the shaft of humerus

Report by Ian J Persad, *Senior House Officer*
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doi: 10.1136/emj.2007.048504

A short cut review was carried out to establish whether functional bracing was as good as U casting in managing fractures of the humeral shaft. Nine papers were found using the reported searches, of which two presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of these best papers are tabulated. It is concluded that functional bracing is at least as good as and possibly better than U-slabbing in this situation.

Clinical scenario

You are seeing a patient in the emergency department with a fractured shaft of humerus. You have never applied a U-slab before and call the orthopaedic registrar for assistance. He says that it would be much easier (and better for the patient) if you used a functional brace. You have no idea what he is talking about – but wonder if what he says is true.

Three-part question

In [patients with fracture shaft of humerus] is [functional bracing as effective as U-slab/cast] at [reducing pain and complications of fracture healing]?

Search strategy

The Cochrane Library Issue 1 2007 Humerus [MeSH] explode all trees 41 records 0 relevant. Medline 1966 1950 to February Week 2 2007 Embase 1980 to 2007 Week 08. Using the OVID interface [exp Humeral Fractures/] AND [exp Braces/] AND [exp Casts, Surgical/or casts.mp.] Limit to human and English Language.

Outcome

A total of nine papers were found, all of which were relevant but only two addressed the specific question. These are shown in table 3.

Comments

Initiating management of humeral fractures can be very daunting to the inexperienced casualty officer. This is especially so since the proper application of a U-slab comes with practice and is extremely difficult if not impossible in the obese patient.

► **CLINICAL BOTTOM LINE**

Fracture bracing is as effective as or even superior to U-slabbing in the treatment fractures of the humeral shaft.

Sharma VK, Jain AK, Gupta RK, *et al*. Non operative treatment of fractures of the humeral sfaft: a comparative study. *Journal of the Indian Medical Association* 1991;**89**:157–160.
Camden P, Nade S. Fracture bracing the humerus. *Injury* 1992;**23**:245–8.

Atropine: Re-evaluating its use during paediatric RSI

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doi: 10.1136/emj.2007.048512

A short cut review was carried out to establish whether pre-treatment with atropine reduces the incidence of clinically significant bradycardia in children undergoing rapid sequence induction of anaesthesia in the Emergency Department. 112 papers were found using the reported searches, of which two presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of these best papers are tabulated. It is concluded that there is evidence that the routine use of atropine is does not reduce the incidence of bradycardia during RSI in paediatric patients.

Clinical scenario

An 8-month-old child presents to the emergency department in status epilepticus and is given so much benzodiazepines during treatment that he can no longer protect his airway. His vital signs are all stable and a non-rebreather mask is helping him to

Table 3

Author, country, date	Patient group	Study type	Outcomes	Key results	Study weaknesses
Sharma VK *et al*, 1991, India	65 cases of humeral shaft fracture 40 were treated by functional cast bracing vs 25 patients treated by U cast method.	Controlled trial	Average time taken for union was Varus angulation of less than 5 degrees.	7.5 weeks vs 10 weeks 16% vs 50%	Small sample size. Age of patients not considered Not randomised
Camden P *et al*, 1992, Australia	8 patients treated with a plaster U slab were matched for type and level of fracture with a group treated with a humeral brace	Controlled trial	Healing time Final alignment of the fracture Range of elbow motion at the time of union	6.4 vs 7.1 weeks (NSD) AP 7 vs 8 degrees ML 8 vs 13 degrees 50–119 degrees vs 11–126 degrees	Small sample size No clarity in ''matching process'' Not randomised

Table 4

Author, country, date	Patient group	Study type	Outcomes	Key results	Study weaknesses
McAuliffe G *et al*, 1995, Canada	41 ASA class I or II children aged 1 to 12 undergoing elective surgery Those with a history of neuromuscular disease, medications known to affect neuromuscular function, or malignant hyperthermia were excluded.	Randomised single blinded control study	Episodes of bradycardia Dysrhythmias Increase in heart rate	1 vs 0 7 vs 3 Statistically significant rise (p, 0.05) in the atropine group	It was assumed prior to the study that succinylcholine induced bradycardia occurs 50% of the time so that is what figure was used for the power calculation. However, there were no bradycardic events during the study making the power insufficient to show there is a difference between succinylcholine-induced bradycardia with and without atropine. This study was done in the operating room in a controlled setting which is a different environment to the ED.
	Atropine (20 ug/kg) and succinylcholine (1.5 mg/kg) vs succinylcholine alone				
Fastle RK *et al*, 2004, USA	143 paediatric patients ranging in age from newborn to 19 years who underwent RSI from 1997 to March 2001 in a level 1 paediatric hospital. The study used ACEP recommendations to determine those patients who should receive atropine and those who should not 68 in the atropine group and 75 in the no-atropine group.	Retrospective cohort study	Bradycardia (two standard deviations below the mean for age or a 30% decrease from baseline HR on presentation).	3 in the atropine group and 3 in the no-atropine group.	The study is of insufficient power and design. This was a retrospective study and all medical data was abstracted from the medical record. The principle investigator was not blinded to the results. Most patients in this study received rocuronium and reflex bradycardia was seen only 4% of the time regardless of whether atropine was given or not. 16 of the 143 patients received succinylcholine and none of these experienced any bradycardic events.

maintain his oxygen saturations. As you prepare to intubate him using RSI, you wonder if atropine is really necessary or helpful in preventing the bradycardia reported during endotracheal intubation.

Three-part question

In [paediatric patients undergoing rapid sequence intubation] does [pre-treatment with atropine] reduce the [incidence of clinically significant reflex bradycardia]?

Search strategy

Using the OVID interface Medline 1950 to February Week 3 2007 [(exp intubation, intratracheal OR intubation.mp OR intubate$.mp) AND (exp atropine/or atropine.mp) AND (exp bradycardia/or bradycardia.mp)]. LIMIT to human AND English AND ''all child (0 to 18 years).'' Embase 1980 to 2007 Week 08. [(exp intubation, intratracheal OR intubation.mp OR intubate$.mp) AND (exp atropine/or atropine.mp) AND (exp bradycardia/or bradycardia.mp)]. LIMIT to human AND English AND to (child <unspecified age> or preschool child <1 to 6 years> or school child <7 to 12 years> or adolescent <13 to 17 years>), The Cochrane Library Issue 1 2007 atropine (kw) AND bradycardia (kw) 59 articles of which 0 were relevant. Subject groups of premeds and outpatients were deemed inappropriate.

Outcome

A total of 112 unique papers were found, of which two were relevant and are included in table 4.

Comments

The evidence from these two studies would indicate that the incidence of reflex bradycardia in children during rapid sequence intubation (RSI) is much lower than previously thought. Furthermore, it does not appear the paralysing agent used significantly contributes to incidences of bradycardia. It appears that hypoxia, not foregoing pre-treatment with atropine, is a stronger predictor of patients who will develop reflex bradycardia following RSI.

► CLINICAL BOTTOM LINE

There is evidence that the use of atropine is unnecessary when performing RSI in paediatric patients in the emergency department. However, this evidence lacks statistical power and further studies are needed.

McAuliffe G. Bissonnette B. Boutin C. Should the routine use of atropine before succinylcholine in children be reconsidered? *Can J Anaesth* 1995;**42**;724–9.
Fastle RK. Roback MG. Pediatric rapid sequence intubation: incidence of reflex bradycardia and effects of pretreatment with atropine. *Pediatr Emerg Care* 2004;**20**;651–5.